matter; consequently when this ring was treated by nitric acid, and the solution evaporated to dryness, the result was a product which proved *no* arsenical reactions.

Some of the slips having been heated in a current of dry hydrogen gas gave, with difficulty, three or four stains, whose aspect *was not arsenical*, and which was evidently formed by organic matter; by the reagents proper for indicating arsenic, it was impossible for me to prove the presence of that substance. Other slips having been placed in the liquid, which had already been twice acted upon by copper, acted precisely in the same way as those which were placed in it a second time; in the Marsh apparatus they produced not one stain.

The solid portion of the liver, which had not been dissolved in the hydrochloric acid, *retained much arsenic*, for, when incinerated with nitrate of potash, after having been previously well washed, it yielded a considerable quantity of that metal.

Exp. 3.—I treated several of the slips which had remained in the liquid with nitric acid, for the purpose of transforming the arsenic, which they might have contained, into insoluble arseniate of copper; I evaporated the liquid to dryness, in order to expel the excess of nitric acid, and I then dissolved the nitrate of copper in water. The precipitated arseniate of copper, after having been washed, was introduced into a Marsh's apparatus. The results which I obtained were so different from one another, that it was impossible to come to any decisive conclusion; in some cases I obtained a pretty considerable number of arsenical stains; in others I had less; finally, in others I had none at all. However, when I decomposed the arseniate by potash, before I introduced it into the apparatus, I constantly obtained arsenic.

I think I may conclude from the foregoing, that the process proposed by Reinsch is not nearly so valuable as its author would make it; *first*, because it is difficult, if not impossible, to dissolve in hydrochloric acid the whole of the arsenic contained in the organs into which it has been carried by absorption, (exp. 2.); and secondly, because, even granting that by employing *a great number of copper slips*, the whole of the arsenious acid had been extracted from the dissolution of hydrochloric acid mixed with organic matter, it would not be possible, by means of heat, to extract nearly all the arsenious acid, and which besides would perhaps not present all its characters, (exp. 1.); and finally, because it is not true that the hydrogen easily transforms the arsenic contained in the copper slips into arseniuretted hydrogen.

However, I see no inconvenience, and it may perhaps turn out to be advantageous, to test a *small quantity* of the suspected arsenical liquid by Reinsch's process; indeed, if after having boiled two or three slips of copper, and a few grammes of the liquid with hydrochloric acid during a few minutes, after a certain time they lose their colour, and seem to turn white, we may believe that they have taken arsenic from the liquid, and it will be sufficient to subject them to the heat of a lamp in a tube containing air, to obtain arsenions acid.

Guided by this result, the experimenter can afterwards extract the arsenic by treating the whole suspected mass with chlorine. It is indispensable, however, before making use of the copper, to ascertain that it does not, of itself, yield arsenic. The brown colour of the slips cannot be considered as an indication of the presence of arsenic, for they acquire that colour when put into a liquid which contains a little non-arsenical hydrochloric acid, especially when this contains organic matters.—*Chemist*, Nov. 1843. T. R. B.

---

70. *A new process for the absolute distinction and separation of Arsenic from Antimony.* By W. Behrens. (*Journal de Pharmacie*, July, 1843.)

So many methods have lately been found for the distinction and separation of arsenic from antimony, in medico-legal investigations, and in particular, Pettenhofer's method, corrected by Fresenius, (see *American Journal of Medical Sciences*, New Series, Vol. vi. p. 499,) so well answers the object of the judges in the investigations concerning poisoning, that we are led to regard this subject as having arrived to the highest degree of perfection.

Nevertheless, we have not hitherto been acquainted with an efficient and practicable process for the quantitative analysis of these two bodies, when it is necessary to separate them in very small quantities. I have for some time separated them quantitatively, for example, in analysis of scoriæ, by a simple and sure method which I will describe.

I convert the arsenic and antimony into sulphurets, and I add to the mixture, whilst still moist, an equal volume of neutral nitrate of lead, and nearly as much water. I boil the mass in a porcelain capsule, stirring without interruption, and renewing the evaporated water, until the whole has acquired a deep brown colour. I then filter it.

The residue contains all the antimony, and a portion of the arsenic, the treatment of which will be indicated further on. The solution which contains only arsenious acid, nitric acid, and oxide of lead, is treated with carbonate of ammonia, so long as any precipitate is formed. I add hydrochloric acid to the liquor which is separated from the carbonate of lead by filtration, until there is an acid reaction, and I pass into it a current of sulphuretted hydrogen.

The sulphuret of arsenic is obtained free from all trace of antimony.

To separate, also, the arsenic which remains in the state of sulpho-arseniuret of lead, in the mass remaining from the first filtration, I digest it at a gentle heat, with caustic ammonia, which converts the sulpho-arseniuret of lead into sulphuret of lead and sulphuret of arsenic, the latter of which is dissolved in the ammonia. To this filtered solution I add a little hydrochloric acid, and I add the precipitate of sulphuret of arsenic to the first obtained.—*Ibid.*

T. R. B.

—

71. *Cold affusion in poisoning by Prussic Acid.*—Additional proofs of its utility. —M. Louyet, Professor of Chemistry at Brussels, makes the following statement. It is now several months since I noticed the following extract from an English journal. At a meeting of English chemists, held at Sunderland, Dr. Robinson made the following experiment in the presence of his colleagues. He took two rabbits, and poured on the tongues of each four drops of prussic acid. The effect was instantaneous. They fell down apparently dead. He now applied the antidote. Cold water, containing a mixture of saltpetre and common salt, was poured on their heads and along the spine. The rabbits were instantly resuscitated, and in a few minutes hopped about with their usual briskness.

This result was so remarkable, that M. Louyet was desirous of verifying its perfect accuracy, and therefore repeated the experiment as follows. He introduced, by means of a tube, into the mouth of a young and healthy rabbit, two drops of a mixture, consisting of pure prussic acid recently prepared one part, and alcohol four parts. When the poison reached the mouth, the animal fell as if struck with lightning, and did not revive. The same application was then made to another, and as soon as the poison was introduced, a solution of common salt cooled down to 15° below zero, was poured over its head and back. In a few minutes the animal was perfectly restored. It thus appears that *very cold water* is an admirable means of restoring the power of the muscles, when it has been destroyed by the poison.—*Bulletin de L'Académie Royale de Bruxelles.*

T. R. B.

—

72. *Death from large doses of Quinine.*—M. Recamier ordered to a man 26 years of age, admitted into the Hotel Dieu, 27th November, 1842, labouring under acute rheumatism, 48 grains of the sulphate of quinine, in 12 powders, one to be taken every hour. The next day 72 grains of the sulphate were ordered, six to be taken every hour; but after the eighth dose the patient was suddenly seized with violent agitation, followed by furious delirium, and died in a few hours. On examination, evidences of severe inflammation of the cerebral membranes were discovered.

An analogous case, in which very dangerous symptoms supervened after the administration of four scruples of the sulphate, in twelve hours, occurred about the same time in the wards of M. Husson.—*Gaz. des Hôpitaux*, Dec. 8, 1842.